

BOSTON COLLEGE  
DEPARTMENT OF ECONOMICS

EC155  
Spring 1999  
T Th 12:00-1:15  
Cushing 335

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HONORS STATISTICS  
MANAGEMENT

This is an introductory course in statistics. The focus of the course is statistical inference -- how to draw reasonable inferences about a population on the basis of a sample drawn from that population. The course has four sections, each more interesting than the previous one.

- 1) descriptive statistics
- 2) probability theory
- 3) statistical inference
  - point estimation
  - interval estimation
  - hypothesis testing
- 4) regression analysis

The brief section on descriptive statistics will be a review for some of you. Probability theory is interesting in its own right, and is a necessary prerequisite for statistical inference, which is the heart of this course. We will end with a brief introduction to regression analysis, which is the primary statistical tool used by economists and many other social scientists, and a logical and very valuable sequel to this course. Students who enjoy and do well in EC155 should consider taking EC228 (Econometrics) or MD384 (Applied Statistics).

Computer program:

A computer program will be required for some of the problem set assignments. We will use Small Stata, and Kevin Cahill will run a tutorial session early in the semester. Other statistical packages can be used as well.

### Textbooks:

Thomas Wonnacott and Ronald Wonnacott, Introductory Statistics for Business and Economics, John Wiley and Sons (4th edition). This text is available in the bookstore.

### Course Requirements:

This course meets twice per week for lectures. I will also run optional review sessions during most weeks, focusing primarily on the problem sets. We will schedule these as we proceed. There will be two in-class midterm exams and a comprehensive final exam, eight problems sets (due in class on the dates noted) and five short in-class quizzes. The problem set due dates, quiz dates and exam dates are all shown on the syllabus. Get them on your calendar now!

The problem sets are absolutely essential to learning this material. I urge you to work on these problem sets in groups of 3 or 4, and learn from each other.

This course is hierarchical, with each section building on the prior ones. Therefore, it is a very bad idea to fall behind. Class attendance is very highly recommended, as is serious effort on the problem sets.

### Grading Policy:

Problem Sets (8)	16%
Quizzes (best 4 of 5)	16%
Midterm I (Thursday, Feb. 25)	15%
Midterm II (Thursday, April 15)	20%
Final Exam (Tuesday, May 11, 9:00 AM)	33%

There will be no make-up exams or quizzes, so pay close attention to the dates on the syllabus below. Those who miss a midterm will have the weights on subsequent exams increased. The lowest of the 5 quiz grades will be dropped, so missing more than one is a bad idea. Submission of the problem sets will be noted, and credit based on the number your group hands in, but not on the numerical grades you receive on them.

### Academic Integrity:

I expect all students to do only their own work on quizzes and exams, and to contribute on any problems set submissions that have your name on it. We will discuss collaboration on the problems sets in more detail in class.

## SYLLABUS

<u>DATE</u>	<u>TOPIC</u>	<u>CHAP</u>	<u>QUIZ</u> [chap]	<u>PROBLEM SETS</u>		
				<u>OUT</u>	<u>DUE</u>	<u>BACK</u>
1/19	Introduction	1				
1/21	Descriptive statistics	2		PS1		
1/26	Descriptive statistics	2				
1/28	Probability	3		PS2	PS1	
2/2	Probability	3				PS1
2/4	Probability	3	Quiz 1 [2]			
2/9	Discrete random variables	4(1-3)		PS3	PS2	
2/11	Discrete random variables	4(1-3)				
2/16	Discrete random variables	4(1-3)				PS2
2/18	Continuous random variables	4(4-6)	Quiz 2 [3]	PS4	PS3	
2/23	Continuous random variables	4(4-6)				PS3
2/25	MIDTERM EXAM I	[1 - 4.3]				
3/9	Two random variables	5				
3/11	Sampling	6		PS5	PS4	
3/16	Sampling	6				PS4
3/18	Point Estimation	7	Quiz 3 [4,5]		PS5	
3/23	Confidence Intervals	8		PS6		PS5
3/25	Confidence Intervals	8				
3/30	Confidence Intervals	8				
4/6	Hypothesis testing	9		PS7	PS6	
4/8	Hypothesis testing	9				PS6
4/13	Hypothesis testing	9	Quiz 4 [7,8]			
4/15	MIDTERM EXAM II	[4.4 - 8]				
4/20	Linear regression	11(1-2)				
4/22	Linear regression	12(1-3)		PS8	PS7	
4/27	Linear regression	13(1-4)				PS7
4/29	Linear regression	14 (1)	Quiz 5 [9]			
5/4	Review				PS8	PS8
5/11	FINAL EXAM Saturday, May 11, 9:00 AM	[all]				